

What is claimed is:

1. An apparatus for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide, which comprises the following (A), (B) and (C) that are so planned as to be resistant to a pressure not lower than the critical pressure of carbon dioxide and are connected in series in that order and in which the inner temperature of (A) and (B) is kept not lower than the critical temperature of carbon dioxide:

- (A) a high-performance pressure mixer for mixing a liquid food and carbon dioxide;
- (B) an accumulator (a pressure pipe);
- (C) a pressure-resistant carbon dioxide releaser.

2. The apparatus for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide as claimed in claim 1, wherein the liquid food is a fresh juice of orange, grape fruit, grape (Kyoho), peach or apple.

3. A method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide, which comprises introducing a liquid food and carbon dioxide into the apparatus for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide of claim 1, under the following conditions (a) and (b), then keeping them therein and letting them out of it:

- (a) the liquid food and carbon dioxide to be introduced into the high-performance pressure mixer are pressurized to a pressure

not lower than the critical pressure of carbon dioxide;
(b) the liquid food and carbon dioxide in the high-performance pressure mixer and the accumulator are all the time heated at a temperature not lower than the critical temperature of carbon dioxide.

4. The method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide as claimed in claim 3, wherein carbon dioxide is in a supercritical state.

5. The method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide as claimed in claim 3 or 4, wherein the staying and passing time of the liquid food and carbon dioxide in the apparatus is not shorter than 20 minutes.

6. The method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide as claimed in any of claims 3 to 5, wherein the ratio by weight of the liquid food to carbon dioxide to be introduced into the high-performance pressure mixer is from 70/30 to 30/70.

7. The method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide as claimed in any of claims 3 to 6, wherein the liquid food is a fresh juice of orange, grape fruit, grape (Kyoho), peach or apple.

8. A liquid food obtained by the use of the apparatus for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide of claim 1 or 2.

9. A liquid food obtained according to the method for liquid food sterilization or enzyme inactivation with supercritical carbon dioxide of any of claims 3 to 7.